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EXAMINER

HAN, CLEMENCE S

ART UNIT PAPER NUMBER

2665

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/702,293

Applicant(s)

BOURLAS ET AL.

Examiner

Clemence Han

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 and 23 is/are allowed.
- 6) ☒ Claim(s) 21, 22, 24-33, 35, 36, 38, 39, 41-47, 49, 50, 52, 53, 55-69 and 71 is/are rejected.
- 7) ☒ Claim(s) 34, 37, 40, 48, 51, 54, 70 and 72 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06 May 2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 24 is objected to because of the following informalities: There are duplicated "the" in "a plurality of the the incoming packets" (see line 1-2).

Appropriate correction is required.

2. Claim 32 and 66 are objected to because of the following informalities: The periods are missing from the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 24-26, 35, 49 and 68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 24 recites the limitation "the first fixed-the first-packet format" in line 2. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 24 recites the limitation "the translator controller" in line 4. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 25 recites the limitation "the translator controller" in line 5. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 35, 49 and 68 recites the limitation “including at least a portion of said common addressing data in said payload of said second-format packet”.

However, their respective parent claims 27, 41 and 55 recites the limitation “omitting redundant common addressing data from said payload of said second-format packet”. It is not clear how to omit and include the common address data at the same time.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 27-29, 33, 35, 36, 38, 41-43, 47, 49, 50 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Allan et al. (US 5,946,313).

Regarding to claim 27, Allan teaches a method comprising: receiving data in a plurality of first-format packets comprising common header addressing data and formatted according to a first format (ATM cell), the first format being a fixed length format (Column 7 Line 36-38); mapping at least some of said common addressing data to one or more fields of a second-format packet (Ethernet frame)

(Column 7 Line 62-64); combining payload data of said first-format packets in a payload of said second-format packet (Column 7 Line 60-62, see Figure 3A); and omitting redundant common addressing data from said payload of said second-format packet (Column 7 Line 40-41 and Column 60-62).

Regarding to claim 28, Allan teaches said first format comprises a fixed-length packet format (ATM cell) and said second-format packet is formatted according to a variable length packet format (Ethernet frame) (see Figure 3A).

Regarding to claim 29, Allan teaches said plurality of first-format packets comprise ATM cells (Figure 3A).

Regarding to claim 33, Allan teaches said second-format packet comprises a MAC packet, and further comprising deriving a MAC header for said MAC packet based, at least in part, on said common header addressing data (Column 7 Line 62-64, see Figure 3A).

Regarding to claim 35, Allan teaches including at least a portion of said common addressing data in said payload of said second-format packet (Figure 3A).

Regarding to claim 36, Allan teaches said first-format packets comprise a first-format packet header 22, and further comprising: mapping said first-format packet header to a header of said second-format packet (Column 7 Line 62-64, see

Figure 3A); and omitting said first-format packet header from said payload of said second-format packet (Column 7 Line 40-41 and Column 60-62).

Regarding to claim 38, Allan teaches disposing a portion of first-format header addressing data common to said incoming packets in a single field of said second-format packet (Column 7 Line 62-64, see Figure 3A).

Regarding to claim 41, Allan teaches an apparatus comprising: means 27 for receiving data in a plurality of first-format packets comprising common header addressing data and formatted according to a first format (ATM cell), the first format being a fixed length format (Column 7 Line 36-38); means 33 for mapping at least some of said common addressing data to one or more fields of a second-format packet (Ethernet frame) (Column 7 Line 62-64); means 33 for combining payload data of said first-format packets in a payload of said second-format packet (Column 7 Line 60-62, see Figure 3A); and means 33 for omitting redundant common addressing data from said payload of said second-format packet (Column 7 Line 40-41 and Column 60-62).

Regarding to claim 42, Allan teaches said first format comprises a fixed-length packet format (ATM cell) and said second-format packet is formatted according to a variable length packet format (Ethernet frame) (see Figure 3A).

Regarding to claim 43, Allan teaches said plurality of first-format packets comprise ATM cells (Figure 3A).

Regarding to claim 47, Allan teaches said second-format packet comprises a MAC packet, and further comprising means for deriving a MAC header for said MAC packet based, at least in part, on said common header addressing data (Column 7 Line 62-64, see Figure 3A).

Regarding to claim 49, Allan teaches including at least a portion of said common addressing data in said payload of said second-format packet (Figure 3A).

Regarding to claim 50, Allan teaches said first-format packets comprise a first-format packet header 22, and further comprising: means for mapping said first-format packet header to a header of said second-format packet (Column 7 Line 62-64, see Figure 3A); and means for omitting said first-format packet header from said payload of said second-format packet (Column 7 Line 40-41 and Column 60-62).

Regarding to claim 52, Allan teaches means for disposing a portion of first-format header addressing data common to said incoming packets in a single field of said second-format packet (Column 7 Line 62-64, see Figure 3A).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 21, 24, 39, 53, 55-63, 67-69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokudo (US 5,978,361) in view of Allan et al..

Regarding to claim 21, Kokudo teaches an apparatus for communicating data between a plurality of users and a network, the apparatus comprising one or more base stations 2, each base station including a network connection accepting incoming data in packets from a wide area network in a first-packet format, the first-packet format being a fixed-length format (ATM, see Figure 3); a transmission unit 2 having a plurality of directional antennas 21, each antenna sending and receiving radiofrequency communications 201 with a plurality of associated users within a directional sector served by the antenna, each user having customer premise equipment complementary to the transmission unit; a transmission controller 23 for directing transmission of data signals to each user; and data receiving apparatus associated with each user, the data receiving

apparatus 33: receiving the transmitted data signals (Figure 3). Kokudo, however, does not teach a translation controller which reduces data from headers or from trailers of the incoming packets in a process of translating the incoming data into a second packet format, the second packet format being a variable length format or a data receiving apparatus decoding the received data signals into received data having the second packet format, reconstructing the received data into the first packet format, and checking the reconstructed data for errors. Allan teaches a translation controller 33 which reduces data from headers or from trailers of the incoming packets in a process of translating the incoming data into a second packet format (Ethernet frame) (Column 7 Line 60-64), the second packet format being a variable length format and a data receiving apparatus decoding the received data signals into received data having the second packet format, reconstructing the received data into the first packet format (Column 8 Line 37-41, see Figure 3B), and checking the reconstructed data for errors (Column 1 Line 61-62). It would have been obvious to one skilled in the art to modify Kokudo to translate data into more compact format as taught by Allan in order to use the bandwidth more efficiently (Column 5 Line 12-15).

Regarding to claim 24, Allan teaches a plurality of the incoming packets formatted in the first packet format have a common destination and each comprise

a header comprising identical first-format overhead data, and wherein the translation controller is capable of preparing a second-format packet to convey data in the incoming packets having the common destination by: (d) mapping the first-format overhead data into a header of a packet formatted according to the second packet format (Column 7 Line 62-64); (e) representing all user data from the one or more incoming packets having the common destination in a payload of the packet formatted according to the second packet format (Column 7 Line 60-62, see Figure 3A); and (f) omitting from the payload first-format overhead data mapped into the header of the packet formatted according to the second packet format (Column 7 Line 40-41 and Column 60-62).

Regarding to claim 39 and 53, Kokudo teaches receiving at one or more directional antennas 21 signals 201 transmitted from one or more subscribers. Kokudo, however, does not teach decoding said received signals into received data having said second-packet format; and reformatting said received data having said second-packet format into data having said first-packet format. Allan teaches decoding said received signals into received data having said second-packet format; and reformatting said received data having said second-packet format into data having said first-packet format (Column 8 Line 37-41, see Figure 3B). It would have been obvious to one skilled in the art to modify Kokudo to decode and

reformat the received data as taught by Allan in order to use the bandwidth more efficiently (Column 5 Line 12-15).

Regarding to claim 55, Kokudo teaches a system comprising: one or more base stations 2 comprising: a radio frequency transmitter 23 to transmit in a radio frequency signal; and one or more customer premises equipment (CPE) stations 4 comprising: a radio frequency receiver 33 to receive the radio frequency signal. Kokudo, however, does not teach a segmentation module adapted to buffer data received in a plurality of first-format packets comprising common header addressing data and formatted according to a first format, said first format being a fixed length format; a MAC module adapted to: map at least some of said common addressing data to one or more fields of a second-format packet; combine payload data of said first-format packets in a payload of said second-format packet; and omit redundant common addressing data from said payload of said second-format packet; and a decoder to decode at least a portion of said second-format packet based, at least in part, on said received radio frequency signal. Allan teaches a segmentation module adapted to buffer data received in a plurality of first-format packets comprising common header addressing data and formatted according to a first format (ATM cell), said first format being a fixed length format; a MAC module adapted to: map at least some of said common addressing data to one or

more fields of a second-format packet (Ethernet frame) (Column 7 Line 62-64); combine payload data of said first-format packets in a payload of said second-format packet (Column 7 Line 60-62, see Figure 3A); and omit redundant common addressing data from said payload of said second-format packet (Column 7 Line 40-41 and Column 60-62); and a decoder to decode at least a portion of said second-format packet based, at least in part, on said received radio frequency signal (Column 8 Line 37-41, see Figure 3B). It would have been obvious to one skilled in the art to modify Kokudo to translate data into more compact format as taught by Allan in order to use the bandwidth more efficiently (Column 5 Line 12-15).

Regarding to claim 56, Kokudo teaches a back-haul connection 101 coupled to the one or more base stations 2 to provide one or more of the CPE stations 4 with access to an Internet service.

Regarding to claim 57, Kokudo teaches a video server capable of providing a video service to at least one of said CPE stations 4 (Column 1 Line 13-17).

Regarding to claim 58, Kokudo teaches at least one residential gateway 3 coupled to one of said CPE stations 4.

Regarding to claim 59, Kokudo teaches at least one ATM switch 1 coupled to segmentation module to provide at least one ATM service to one or more of the CPE stations 4.

Regarding to claim 60, Kokudo teaches the ATM switch is capable of providing at least one of a video service, a voice service and/or a data service to said one or more of the CPE stations 4 (Column 1 Line 20-23).

Regarding to claim 61, Kokudo teaches a sectored active antenna array 21 coupled to said radio frequency transmitter 23.

Regarding to claim 62, Allan teaches said first format comprises a fixed-length packet format (ATM cell) and said second-format packet is formatted according to a variable length packet format (Ethernet frame) (see Figure 3A).

Regarding to claim 63, Allan teaches said plurality of first-format packets comprise ATM cells (Figure 3A).

Regarding to claim 67, Allan teaches said second-format packet comprises a MAC packet, and wherein said MAC module is further adapted to derive a MAC header for said MAC packet based, at least in part, on said common header addressing data (Column 7 Line 62-64, see Figure 3A).

Regarding to claim 68, Allan teaches including at least a portion of said common addressing data in said payload of said second-format packet (Figure 3A).

Regarding to claim 69, Allan teaches said first-format packets comprise a first-format packet header, and wherein said MAC module is further adapted to:

map said first-format packet header to a header of said second-format packet (Column 7 Line 62-64, see Figure 3A); and omit said first-format packet header from said payload of said second-format packet (Column 7 Line 40-41 and Column 60-62).

Regarding to claim 71, Allan teaches said MAC module is further adapted to dispose a portion of first-format header addressing data common to said incoming packets in a single field of said second-format packet (Column 7 Line 62-64, see Figure 3A).

13. Claim 22, 32 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allan et al. in view of Mills et al (US 5,793,427) and further in view of Regula (US 6,400,682).

Regarding to claim 22, Allan teaches a method for compressing composite data formatted in ATM cells prior to transmission over a broadband wireless link, the composite data including user data intended for communication to an end user and overhead data not intended for communication to the end user, the method comprising the steps of: obtaining incoming composite data in a plurality of ATM cells to form header-reduced cell data (Column 7 Line 36-38); removing ATM cell header overhead data common to the plurality of ATM cells from one or more of the plurality of ATM cells to form header-reduced cell data (Column 7 Line 40-41

and Column 60-62); concatenating representations of the header-reduced cell data from the one or more of the plurality of ATM cells to form a payload of a variable-length transmission packet (Column 7 Line 60-62, see Figure 3A). Allan, however, does not teach identifying padding bytes added to an ATM trailer cell which are overhead data or removing the padding bytes from the ATM trailer cell. Mills teaches identifying padding bytes added to an ATM trailer cell which are overhead data and removing the padding bytes from the ATM trailer cell (Column 37 Line 5-10). It would have been obvious to one skilled in the art to modify Allan to identify and remove padding bytes as taught by Mills in order to use the bandwidth more efficiently. Allan in view of Mills, however, does not teach adding an indication of the number of data bytes retained from the ATM trailer cell. Regula teaches adding an indication of the number of data bytes retained from the ATM trailer cell (Column 32 Line 24-39). It would have been obvious to one skilled in the art to modify Allan in view of Mills to add an indication of the number of data bytes retained from the ATM trailer cell as taught by Regula in order to easily reconstruct ATM cells at the receiving node.

Regarding to claim 32 and 46, Mills teaches omitting from said payload of said second-format packet padding of an ATM trailer cell among said received packets (Column 35 Line 5-10). Allan in view of Mills, however, does not teach

including in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding. Regula teaches including in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding (Column 32 Line 24-39). It would have been obvious to one skilled in the art to modify Allan in view of Mills to include in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding as taught by Regula in order to easily reconstruct ATM cells at the receiving node.

14. Claim 25, 26, 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokudo in view of Allan et al.. and further in view of Mills et al..

Regarding to claim 25, Allan teaches the plurality of incoming packets comprises a trailer packet, the trailer packet including a payload having user data and overhead padding bytes, the trailer packet including a header with a field indicating that the trailer packet is a last packet among a block of packets having the common destination (Figure 1A), and wherein the translation controller is further capable of including the user data from the trailer packet payload with payload of the packet formatted according to the second packet format (Column 7 Line 60-62, see Figure 3A). Kokudo in view of Allan, however, does not teach

omitting at least some of the padding bytes from the packet formatted according to the second packet format. Mills teaches omitting at least some of the padding bytes from the packet formatted according to the second packet format (Column 37 Line 5-10). It would have been obvious to one skilled in the art to modify Kokudo in view of Allan to remove padding as taught by Mills in order to use the bandwidth more efficiently.

Regarding to claim 26, Mills teaches the ATM trailer cell includes CPCS and SSCS bytes; and wherein all padding cells are omitted from the MAC packet, and the CPCS and SSCS bytes from the ATM trailer cell are omitted from the MAC packet (Column 37 Line 5-10).

Regarding to claim 64, Allan teaches said ATM cells comprise an ATM trailer, said ATM trailer comprises a payload comprising user data and overhead padding bytes (Figure 1A), and wherein said MAC module is further adapted to: include said user data in said payload of said second-format packet (Column 7 Line 60-62, see Figure 3A). Kokudo in view of Allan, however, does not teach omitting at least a portion of said padding from said payload of said second-format packet. Mills teaches omitting at least a portion of said padding from said payload of said second-format packet (Column 37 Line 5-10). It would have been obvious to one

skilled in the art to modify Kokudo in view of Allan to remove padding as taught by Mills in order to use the bandwidth more efficiently.

Regarding to claim 65, Mills teaches omitting from said payload of said second-format packet one or more of padding, CPCS bytes and/or SSCS bytes of an ATM trailer cell among said received packets (Column 37 Line 5-10).

15. Claim 30, 31, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allan et al.. in view of Mills et al..

Regarding to claim 30 and 44, Allan teaches said ATM cells comprise an ATM trailer, said ATM trailer comprises a payload comprising user data and overhead padding bytes (Figure 1A), and further comprising: including said user data in said payload of said second-format packet (Column 7 Line 60-62, see Figure 3A). Allan, however, does not teach omitting at least a portion of said padding from said payload of said second-format packet. Mills teaches omitting at least a portion of said padding from said payload of said second-format packet (Column 37 Line 5-10). It would have been obvious to one skilled in the art to modify Allan to remove padding as taught by Mills in order to use the bandwidth more efficiently.

Regarding to claim 31 and 45, Mills teaches omitting from said payload of said second-format packet one or more of padding, CPCS bytes and/or SSCS bytes of an ATM trailer cell among said received packets (Column 37 Line 5-10).

16. Claim 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokudo in view of Allan et al. and Mills et al. and further in view of Regula.

Regarding to claim 66, Mills teaches omitting from said payload of said second-format packet padding of an ATM trailer cell among said received packets (Column 35 Line 5-10). Kokudo in view of Allan and Mills, however, does not teach including in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding. Regula teaches including in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding (Column 32 Line 24-39). It would have been obvious to one skilled in the art to modify Kokudo in view of Allan and Mills to include in said payload of said second-format packet a padding pattern byte representative of said omitted packet padding as taught by Regula in order to easily reconstruct ATM cells at the receiving node.

Allowable Subject Matter

17. Claim 1-20 and 23 are allowed.

18. Claim 34, 37, 40, 48, 51, 54, 70 and 72 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

19. Applicant's arguments with respect to claim 1-72 have been considered but are moot in view of the new ground(s) of rejection.

20. Examiner has noticed that there is a misunderstanding on which claims has been allowed in the Remark received on May 6, 2005. The allowed claims on January 28, 2005 are 1-20 and 23. The claims 21, 22 and 24-26 were cancelled after a telephone interview on January 21, 2005.

Conclusion

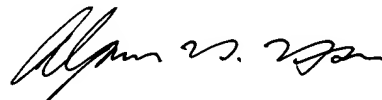
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clemence Han whose telephone number is (571) 272-3158. The examiner can normally be reached on Monday-Thursday 7 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. H.

Clemence Han
Examiner
Art Unit 2665



ALPUS H. HSU
PRIMARY EXAMINER